

ABSTRACT

This disclosure provides a system for qualifying embryonic stem cells intended for human therapy. A comprehensive sequencing project has identified important markers that are characteristic of undifferentiated pluripotent cells. Combinations of these markers have been used to screen feeder cells, media additives, and culture conditions that promote rapid expansion of stem cells without differentiation. By measuring undifferentiated stem cell markers, and markers formed by early progenitors such as stromal cells, the user can quantitate the proportion and extent of differentiation. This establishes standardized criteria for master cell banks and cell cultures that can then be used to produce therapeutic cell populations and medicaments for use in regenerative medicine.